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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,963	08/04/2003	Hyung-Sok Yeo	249/398	4479
27849	7590	09/22/2006	EXAMINER	
LEE & MORSE, P.C. 3141 FAIRVIEW PARK DRIVE SUITE 500 FALLS CHURCH, VA 22042			BAXTER, ZOE E	
			ART UNIT	PAPER NUMBER
			3735	

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/632,963	YEO ET AL.	
	Examiner	Art Unit	
	Zoe E. Baxter	3735	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 9-15 and 22-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 17-21 and 29-31 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: ____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :8/4/03 11/20/03
7/29/04 09/14/05.

Art Unit: 3735

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of species I including claims 1-8, 16-21 and 29-31 in the reply filed on September 8, 2006 is acknowledged. Claims 9-15 and 22-28 are withdrawn.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 5-8 and 19-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Regarding claims 5 and 19 it is unclear how the pressure application unit applies pressure to the body using the nut and bolt method. As pictured in figure 2 when one turns the bolt the only thing that will happen is the bolt will move farther into the nut since there is no supporting member to hold either the nut or the bolt fixed.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 3, 4, 17, 18 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Aronow et al. (U.S. Patent No. 6253097). Aronow et al. describes a probe for use in photoplethysmographic measurement (column 3 line 50) comprising a light source (column 2 lines 24-27), a photodetector (column 2 line 54), a body having a space for receiving the object (column 9 lines 26-30) in which the light source and photodetector are positioned in the same optical axis (figure 3) and a pressure application unit which is a spring in the probe which exerts a force to cause the two housings to be pressed against the appendage (column 9 lines 12-18). The spring will inherently cause a pressure to be exerted on the object by the light source.

6. Regarding claim 3 Aronow et al. states the electrical signals that are received by the monitor are produced by the light detector inherently includes a photoelectric converter.

Art Unit: 3735

7. Regarding claim 4 since the spring as taught by Aronow et al. is applying the force to the opposite end of the probe that is encompassing the finger the pressure is being applied in the same optical axis as the light source and the photodetector units (column 9 lines 12-18).

8. Regarding claim 17 Aronow et al. disclose a biological measuring system comprising a probe (column 6 line 36) and a monitor, which controls the operation of the probe (column 6 lines 64-66), processes the information (column 6 lines 57-59) and a display (column 6 line 59-column 7 line 3). As discussed above the probe comprises a light source (column 2 lines 24-27), a photodetector (column 2 line 54), a body having a space for receiving the object (column 9 lines 26-30) and a pressure application unit (column 9 lines 12-18).

9. Regarding claim 18 since the spring as taught by Aronow et al. is applying the force to the opposite end of the probe that is encompassing the finger the pressure is being applied in the same optical axis as the light source and the photodetector units (column 9 lines 12-18).

10. Regarding claim 29 Aronow et al. disclose a photoplethysmographic (column 3 line 50) display unit (column 6 lines 59-61). Aronow et al. explain that the display is for production of a readable output and a waveform can be a human readable output.

11. Claims 1, 2 and 30 rejected under 35 U.S.C. 102(e) as being anticipated by Schmitt (U.S. Patent No. 6606509). Schmitt discloses a probe comprising a light source (column 8 lines 11-20), a photodetector (column 8 lines 11-20), a body having a space

Art Unit: 3735

for receiving the object (figure 10) and a pressure application unit (column 7 line 63-column 8 line 3). Schmitt teaches the use of an inflatable ring to apply the pressure.

12. Regarding claim 2 Schmitt discloses the use of light emitting diodes as a light source (column 8 line 19).

13. Regarding claim 30 Schmitt discloses the use of a microprocessor as the control for the timing, data acquisition and processing to determine the value (column 8 lines 6-8).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitt in view of Gavish (U.S. Patent No. 4580574). Schmitt teaches a probe comprising a light source (column 8 lines 11-20), a photodetector (column 8 lines 11-20), a body having a space for receiving the object (figure 10) and a pressure application unit (column 7 line 63-column 8 line 3). Schmitt fails to teach that the pressure application unit comprises a nut and a bolt coupled to the nut. Gavish teaches a pressure application unit using a screw (figure 1 reference 5) and threaded receiving portion (figure 1 reference 3) to apply pressure to maintain a constant tissue contact between the apparatus and the body tissue (column 5 lines 25-31). A screw coupled with a threaded portion of the

Art Unit: 3735

device is functionally equivalent to a bolt coupled with a nut. It would have been obvious to one of ordinary skill in the art at the time of the present inventor to modify the probe of Schmitt to include the use of a threaded member to apply pressure to an area of the body similar to that of Gavish in order to manually control the amount of pressure applied to the area. By using a manually controlled method of tightening on to the body appendage there is less chance of a malfunction and an injury.

16. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitt as applied to claim 5 above, and further in view of Ogawa et al. (U.S. Patent No. 5427093). As stated above Schmitt probe comprising a light source (column 8 lines 11-20), a photodetector (column 8 lines 11-20), a body having a space for receiving the object (figure 10) and a pressure application unit (column 7 line 63-column 8 line 3). Gavish teaches a pressure application unit using a screw (figure 1 reference 5) and threaded receiving portion (figure 1 reference 3) to apply pressure to maintain a constant tissue contact between the apparatus and the body tissue (column 5 lines 25-31). Neither Schmitt nor Gavish teach a heat-dissipating plate between the nut and the light source. Ogawa et al. teach the use of a heat-dissipating plate above the light source (figure 1 reference 9). If the heat-dissipating plate is located above the light source and the nut is attached to the light source it is inherent that the plate is between the nut and the light source. It would have been obvious to one of ordinary skill in the art at the time of the present inventor to modify the probe of Schmitt to include a heat-dissipating plate similar to that of Ogawa et al. in order to prevent a low temperature burn to the patient (Ogawa et al column 1 lines 53-60).

Art Unit: 3735

17. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aronow et al. in view of Gavish (U.S. Patent No. 4580574). Aronow et al. disclose a biological measuring system comprising a probe (column 6 line 36) and a monitor, which controls the operation of the probe (column 6 lines 64-66), processes the information (column 6 lines 57-59) and a display (column 6 line 59-column 7 line 3). As discussed above the probe comprises a light source (column 2 lines 24-27), a photodetector (column 2 line 54), a body having a space for receiving the object (column 9 lines 26-30) and a pressure application unit (column 9 lines 12-18). Aronow et al fail to teach a pressure unit comprising a nut attached to an upper surface of the light moveable in a vertical direction and a bolt coupled to the nut. Gavish teaches a pressure application unit using a screw (figure 1 reference 5) and threaded receiving portion (figure 1 reference 3) to apply pressure to maintain a constant tissue contact between the apparatus and the body tissue (column 5 lines 25-31). A screw coupled with a threaded portion of the device is functionally equivalent to a bolt coupled with a nut. It would have been obvious to one of ordinary skill in the art at the time of the present inventor to modify the biological of Schmitt to include the use of a threaded member to apply pressure to an area of the body similar to that of Gavish in order to manually control the amount of pressure applied to the area and maintain better contact between the probe and the tissue.

18. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aronow et al. as applied to claim 19 above, and further in view of Ogawa et al. (U.S. Patent No. 5427093). Aronow et al. disclose a biological measuring system comprising a probe

Art Unit: 3735

(column 6 line 36) and a monitor, which controls the operation of the probe (column 6 lines 64-66), processes the information (column 6 lines 57-59) and a display (column 6 line 59-column 7 line 3). As discussed above the probe comprises a light source (column 2 lines 24-27), a photodetector (column 2 line 54), a body having a space for receiving the object (column 9 lines 26-30) and a pressure application unit (column 9 lines 12-18). Gavish teaches a pressure application unit using a screw (figure 1 reference 5) and threaded receiving portion (figure 1 reference 3) to apply pressure to maintain a constant tissue contact between the apparatus and the body tissue (column 5 lines 25-31). Neither Aronow et al. nor Gavish teach a heat-dissipating plate between the nut and the light source. Ogawa et al. teach the use of a heat-dissipating plate above the light source (figure 1 reference 9). If the heat-dissipating plate is located above the light source and the nut is attached to the light source it is inherent that the plate is between the nut and the light source. It would have been obvious to one of ordinary skill in the art at the time of the present inventor to modify the probe of Aronow et al. to include a heat-dissipating plate similar to that of Ogawa et al. in order to prevent a low temperature burn to the patient (Ogawa et al column 1 lines 53-60).

19. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aronow et al. in view of Schmitt. Aronow et al. teach a biological measuring system comprising a probe (column 6 line 36) and a monitor, which controls the operation of the probe (column 6 lines 64-66), processes the information (column 6 lines 57-59) and a display (column 6 line 59-column 7 line 3). As discussed above the probe comprises a light source (column 2 lines 24-27), a photodetector (column 2 line 54), a

Art Unit: 3735

body having a space for receiving the object (column 9 lines 26-30) and a pressure application unit (column 9 lines 12-18). Aronow et al. fail to teach that the biological measuring system includes a microprocessor. Schmitt teaches the use of a microprocessor as the controller for a biological measuring device. It would have been obvious to one of ordinary skill in the art at the time of the present inventor to modify the biological measuring device of Aronow et al. to include the use of a microprocessor similar to that of Schmitt in order to control the timing, data acquisition and processing with a single unit (Schmitt column 8 lines 6-8).

20. Referring to claim 31 Aronow et al. teach a biological measuring system comprising a probe (column 6 line 36) and a monitor which controls the operation of the probe (column 6 lines 64-66), processes the information (column 6 lines 57-59) and a display (column 6 line 59-column 7 line 3). As discussed above the probe comprises a light source (column 2 lines 24-27), a photodetector (column 2 line 54), a body having a space for receiving the object (column 9 lines 26-30) and a pressure application unit (column 9 lines 12-18). The biological measuring system further includes a display unit (column 6 lines 59-61). Aronow et al. fail to teach the system includes a device that includes an analog-to-digital converter. Schmitt teaches the use of an analog-to-digital converter. It would have been obvious to one of ordinary skill in the art at the time of the present inventor to modify the biological measuring device of Aronow et al. to include the use of an analog-to-digital converter similar to that of Schmitt in order to convert the data from analog format to digital to better analyze the data.

21. Allowable Subject Matter

22. Claims 7, 8 and 21 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1st paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Regarding claims 7 and 21 the prior art of record fail to teach the use of an elastic member between a nut and a light source.

23. Regarding claim 8 the prior art of record fail to teach the use of a heat dissipating plate between a nut and a light source.

24. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record fail to teach the use of a break button electrically connected to the probe.

Conclusion

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zoe E. Baxter whose telephone number is 571-272-8964. The examiner can normally be reached on Monday-Friday 7:30am-4:00pm.

26. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor II can be reached on 571-272-4730. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Art Unit: 3735

27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



ZEB

Zoe E. Baxter
Examiner
Art Unit 3735



Charles A. Manner, II
SPE, Art Unit 3735